

**STATE FOREST LAND
ENVIRONMENTAL CHECKLIST**

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at <http://www.dnr.wa.gov> under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable: **Belvedere Bald Timber Sale**

Timber Sale Name: **Belvedere Bald***Agreement #:* **30-076688**
2. Name of applicant: **Department of Natural Resources**
3. Address and phone number of applicant and contact person:

**DNR Northwest Region
919 North Township Street
Sedro Woolley, WA 98284
360-856-3500**

**Contact Person: Candace Johnson
Telephone: 360-856-3500**
4. Date checklist prepared: **8/30/2004**
5. Agency requesting checklist: **Department of Natural Resources**
6. Proposed timing or schedule (including phasing, if applicable):
 - a. *Auction Date:* **March 21, 2005**
 - b. *Planned contract end date (but may be extended):* **September 30, 2007**
 - c. *Phasing:* **DOES NOT APPLY**
7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Timber Sale

- | | | |
|-----------|-------------------------------|---|
| <i>a.</i> | <i>Site preparation:</i> | Treatment to be assessed in 2-3 years. |
| <i>b.</i> | <i>Regeneration Method:</i> | Hand-plant with conifer seedlings. |
| <i>c.</i> | <i>Vegetation Management:</i> | Treatment to be assessed in 3-5 years. |
| <i>d.</i> | <i>Thinning:</i> | Treatment to be assessed in 10-15 years. |

Roads:

The BR-ML and BR-89 roads will remain open and continue to be used for future management activities.

Rock Pits and/or Sale:

The BR-89 Hardrock pit will continue to be used and expanded upon in the future for management activities within the area.

Other:
None

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

- ☐ 303 (d) – listed water body in WAU: ☐temp ☐sediment ☐completed TMDL (total maximum daily load):
☐Landscape plan:
☐Watershed analysis:
☐Interdisciplinary team (ID Team) report:
☒Road design plan: Available at DNR Northwest Region office
☒Wildlife report: Wildlife Biologist Memo available at DNR Northwest Region office
☐Geotechnical report:
☐Other specialist report(s):
☐Memorandum of understanding (sportsmen’s groups, neighborhood associations, tribes, etc.):
☒Rock pit plan: Available at DNR Northwest Region office
☒Other: State Soil Survey, 1992; Forest Resource Plan & Environmental Impact Statement, July 1992.
Habitat Conservation Plan & Environment Impact Statement, September 1997.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

10. List any government approvals or permits that will be needed for your proposal, if known.

- ☒HPA ☐Burning permit ☐Shoreline permit ☐Incidental take permit ☒FPA # _____ ☐Other:

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. Complete proposal description:

Considered Area/ Proposed Area: The area considered for the proposed harvest in the Belvedere Bald timber sale included several hundred acres within Sections 1, 2, 3, and 4 of Township 33 North, and Range 6 East. This is a large area of currently inaccessible timberland surrounded by State land to the west and north, and by private ownerships to the south and east. Through office research and field reconnaissance, a significant portion of the potential proposal area was eliminated due to impending conflicts with future stand adjacency issues, or the stand development stage was too young to qualify for regeneration harvesting. One major priority of this proposal is to extend the Bear Creek road system. This further reduced the area of potential harvest, to areas that were near or adjacent to the road segments of interest. After riparian management zones were delineated from the potential harvest area, the result was the approximately 162.4 gross acres that encompasses this proposal.

In addition to the mainline extension goal, the roads for the proposal have been laid out to address resource protection objectives as well as operational feasibility. Along with the protection objectives, possible future timber sales were also considered when determining the desired road locations of this proposal. The rock pit to be used for the road construction and reconstruction activities will be the existing “BR-89” Hardrock pit located in Section 4, of Township 33, North, Range 06 East.

Access to the proposal is available from public roads onto DNR land via the Bear Creek mainline (BR-ML), which is accessible from the Lake Cavanaugh road. The timber harvest will be a combination of cable-yarding and ground-based operations. Eight trees per acre will be retained that are greater than or equal to 12 inches Diameter Breast Height (DBH). These are either marked individually with blue paint or have “Leave Tree Area” tags around clumps of legacy trees. Legacy tree areas are positioned to surround individual or small clumps of windfirm trees, areas with more windfirm trees such as near open edges, or trees with greater wildlife potential.

The DNR NW Region Wildlife Biologist and Soils/Hydrology Specialist have both visited the proposed sale area to evaluate for habitat and slope stability/water quality considerations. Following the harvest, the units will be hand-planted with a mix of conifer seedlings.

Sale area: 162.4 gross acres (Unit 1: 87.2 ac, Unit 2: 63.0 ac, external ROW: 12.2 ac)
154.1 net acres (Unit 1: 80.2 ac, Unit 2: 61.7 ac, external ROW: 12.2 ac)

Est. Volume: 5,982 mbf

Logging System: Cable and Shovel

Landings: Approximately 11

Roads: Required Construction: 11,494 feet
Optional Construction: 776 feet
Required Reconstruction: 568 feet
Abandonment: 776 feet
Culverts installed/replaced: 63

Rock Pits and/or sales: Rock for road construction will be taken from the existing BR-89 Hardrock pit located in Section 4, of Township 33 North, Range 6 East.

Special Forest Product Sales: None

Other Related Actions: None

b. Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

Pre-Harvest Stand Description: The timber stands within this proposal are primarily composed of western hemlock with lower levels of Douglas-fir, western redcedar, Pacific silver fir, and the occasional red alder and bigleaf maple. The age range of stands within the proposal is between 63 to 65 years old. The stands adjacent to this proposal have a similar species composition in the lower elevation ranges, however in the higher elevation areas adjacent to the proposal the species

composition moves towards a stand dominated by Pacific silver fir, and Douglas-fir, with less frequent occurrences of western hemlock and western redcedar. The age of these adjacent stands range from 47 and 65 years old.

Type of harvest: A two-unit regeneration harvest

Overall unit objectives: Generating revenue from trust lands; protecting water quality; extend existing portions of the Bear Creek mainline; maintaining productivity on the site and maintaining wildlife habitat through a tree retention strategy. This proposal meets or exceeds all of the guidelines and prescriptions set forth in the DNR Habitat Conservation Plan, Forest Resource Plan, and Forest Practices Rules and Regulations.

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		12,270	4.51	N/A
Reconstruction		568		0
Abandonment		776	0.28	N/A
Bridge Install/Replace	1			N/A
Culvert Install/Replace (fish)	0			N/A
Culvert Install/Replace (no fish)	63			

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. (See timber sale map. See also color landscape/WAU map on the DNR website <http://www.dnr.wa.gov> under “SEPA Center.”)

a. Legal description:

Unit #1: Parts of Section 3 of Township 33 North, Range 6 East, WM.

Unit #2: Parts of Section 2 and parts of Section 3. All of which is located in Township 33 North, Range 6 East, WM.

Right-Of-Way and reconstruction: Parts of Section 2 , parts of Section 3, parts of Section 4, and parts of Section 6. All of which is located in Township 33 North, Range 6 East, WM.

Rock Pit: Parts of Section 4 of Township 33 North, Range 6 East, WM.

b. Distance and direction from nearest town (include road names):

The entire proposal is located approximately 26 miles, by road, northeast of the town of Arlington. The proposal can be reached from Highway 9 by driving approximately 5.8 miles northeast to Finn Settlement-Grandstrom Road. From this point travel approximately 5.3 miles to Lake Cavanaugh Road. From there travel 3.7 miles to the Bear Creek mainline gate. From the gate travel approximately 11.0 miles along the Bear Creek mainline to the Bear Crossing timber sale, Unit #3. This point is the beginning of the new road construction associated with this proposal.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website <http://www.dnr.wa.gov> under “ SEPA Center.”)

Name	Total Acres	Proposal Acres
CAVANAUGH	29,896	162.4
Sub-basin 6	3,358	~111.9
Sub-basin 7	3,203	~50.5

13. Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website <http://www.dnr.wa.gov> under “SEPA Center” for a broader landscape perspective.)

General Watershed Administrative Unit (WAU) information

Name of WAU	Acres	DNR Acres	Non-DNR Acres	% DNR Land in WAU	% Non-DNR Land in WAU	Proposal Acres	% of total WAU in Proposal	% of DNR Land in Proposal
Cavanaugh	29,896	16,914	12,982	57 %	43 %	162.4	.54%	.96%

The majority of the land in this WAU is designated for timber resource use, and has been so historically.

Past and Future DNR Activities in WAU

DNR Managed Lands – Past and Future Harvests within Cavanaugh WAU
(This proposal is included as part of the estimated acreage for future harvests.)

Cavanaugh WAU	Estimated Acreage Harvested in Past 7 Years	Est. Acreage for Future Harvests for the next year	Total Est. Acreage Past and Future
Acres Within WAU	1,924 even-age, 274 uneven-age	409 even-age, 0 uneven-age	2,607 acres
% of WAU	6.4% even-age, 1% uneven-age	0.04% even-age	0.11 %
% of DNR Acres	11.4% even-age, 1.6% uneven-age	0.06% even-age	0.19%

Data from DNR Database

Future forest management activities in the WAU includes road building, rock pit expansion, silvicultural work and timber harvesting. Activities occurring on DNR managed land will follow Forest Practices Rules, Habitat Conservation Plan (HCP)

guidelines, and the Forest Resource Plan – policies designed minimize environmental impacts. Future forest management activities on privately managed, non-DNR lands will be subject to the Forest Practice Rules

Sensitive wildlife species occurring within the Cavanaugh WAU include recorded presence of goshawk, bald eagle, and osprey, marbled murrelet detection sites, and evidence of cavity nesting ducks.

Proposal Specifics

- A DNR NW Region Wildlife Biologist and Soils/Hydrology Specialist have both visited the proposal to evaluate for wildlife habitat impacts and slope stability/water quality considerations.
- A DNR NW Region Biologist verified that no suitable Marbled Murrelet habitat blocks currently exist within the boundaries of this proposal.
- Slope stability is a concern in the general vicinity of the proposal. There are areas that have likely failed due to past road construction activities in the area, however this proposal is not in those areas, nor does the harvestable proposal area contain similar characteristics.
- Legacy trees were scattered and clumped to help mitigate for any potential aesthetic impacts and select those trees that have desirable wildlife characteristics.
- Riparian and wetland buffers were established according to HCP guidelines, and roads were designed to minimize construction, while providing the best possible access to the area in the future with minimal impact.
- All riparian management zones are no-harvest buffers, except for those associated with type 5 streams.
- There are several type 5 streams within the proposal – equipment will not cross these streams and all timber will be directionally felled and yarded away from the stream channels.
- This proposal is within the lower elevation reaches of the designated Peak Rain on Snow Zone, and according to the most recent data available, the sub basins affected by this proposal are considered hydrologically mature.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☒Hilly, ☒Steep Slopes, ☐Mountainous, ☐Other:

1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).

Cavanaugh WAU

The Cavanaugh WAU consists of 29,896 acres and varies from flat to mountainous with an elevation range of 397 to 3,965 feet and a mean elevation of 1,631 feet. Several mountains in the WAU include Mt. Washington, Table Mountain, Frailey Mountain, and Bald Mountain. Streams within the WAU flow into Pilchuck Creek or Lake Cavanaugh. Rainfall within the WAU ranges between 45 and 80 inches annually, with an average of 59 inches. In general, this WAU is in the western hemlock forest vegetation zone. Timber types range from hardwood to conifer. The low to mid-high elevations are populated with red alder, bigleaf maple, and/or cottonwood hardwood stands, and Douglas-fir, western hemlock, and/or western redcedar conifer stands. The higher elevations in the WAU contain conifer stands generally comprised of Pacific silver fir, western hemlock, and/or western redcedar.

2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).

The proposal lies at elevations between 1400 – 2300 feet. Slope gradient varies approximately from 10-80%, with an average between 30-50%, and the rainfall averages approximately 50-70 inches annually. The northern portion of this proposal is within the lower elevation reaches of the designated Rain on Snow Zone, and according to the most recent data available, the sub basins affected by this proposal are hydrologically mature.

b. What is the steepest slope on the site (approximate percent slope)?

Unit #1: approximately 80%
Unit #2: approximately 70%

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.

State Soil Survey #	Soil Texture	% Slope	Acres	Mass Wasting Potential	Erosion Potential
1281	Gravelly Silt Loam	3%-30%	38	Insignificant	Low
1282	Gravelly Silt Loam	30%-65%	50	Medium	Medium
3894	Gravelly Silt Loam	3%-30%	15	Insignificant	Low
3897	Gravelly Silt Loam	30%-65%	29	Medium	Medium
7438	Gravelly Silt Loam	3%-30%	31	Insignificant	Low

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

1) *Surface indications:*

Some of the type 4 stream channels are deeply incised. Some of the more deeply incised type 4 stream channels in the downslope portion of Unit #1 are inner gorge landforms.

2) *Is there evidence of natural slope failures in the sub-basin(s)?*

☐No ☒Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

There is some evidence of small shallow slope failures (approximately less than 0.2 acres) along some of the stream reaches in the Cavanaugh WAU. These are generally associated with stream reaches in steep draws that have formed by cutting through dense glacial till. Also, there is a large, old, deep-seated landslide northwest of the sale in Section 33, Township 34 North, Range 6 East, W.M.

3) *Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*

☐No ☒Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

Associated management activity:

Some shallow rapid slope failures in high elevations may possibly be attributed to older timber harvest and road construction. There will be no road construction or harvesting activity within these areas.

4) *Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*

☒No ☐Yes, describe similarities between the conditions and activities on these sites:

5) *Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.*

To decrease any adverse effects on the stability of the area, cable yarding will be utilized for the majority of the proposal. In addition, all ground based harvesting will be restricted to periods of drier weather conditions, limited to slopes less than approximately 25%, and restricted from traveling more than approximately 400 feet from an existing road. Potentially unstable sites within the sale area are within HCP-required no-harvest stream buffers.

Road construction is limited to horizontal and vertical curve widening along the existing road location and does not involve areas of slope stability concerns. Roads to be constructed under this proposal have been limited to areas outside of slope stability concerns. Region Geologist reviewed the site of this proposal.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

Approx. acreage new roads: 4.5 Approx. acreage new landings: 1.8 Fill source: native material

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Some localized erosion could occur during road construction and log transportation activities. However, prudent road construction techniques and normal maintenance practices will minimize the amount of erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*

Approximately 4.2 acres of graveled forest road will be left in use for future activities. This area constitutes roughly 2.6% of the gross sale area.

h. Propose measures to reduce or control erosion, or other impacts to the earth, if any:

(Include protection measures for minimizing compaction or rutting.)

To help prevent erosion, ground based yarding will be limited to slopes less than approximately 25% for distances no longer than approximately 400 feet. In addition ground based operations will be limited to drier times of the year. To control road related erosion, culverts will be installed concurrently with construction of the road subgrade, and culvert outlets will not terminate on unprotected soils. All exposed soils resulting from road construction, reconstruction and abandonment will be revegetated.

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust from truck traffic, rock mining, crushing or hauling, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

No emissions are anticipated other than minor amounts of equipment exhaust and road dust created by log hauling activities. If burned, slash will be burned in adherence to WA State's smoke management program.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

If slash is burned, it will be burned in adherence to the State's Smoke Management Program.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. (See timber sale map and forest practice base maps.)

a) Downstream water bodies:

The streams that are within and adjacent to this proposal flow into Pilchuck Creek, which is approximately 1 mile downstream from the proposal area. This creek eventually feeds into the Stillaguamish River near Silvana, WA.

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number , within and adjacent to proposed boundaries (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Unnamed Stream	3	6	156 feet – no harvest
Unnamed Stream	4	17	100 feet – no harvest
Unnamed Stream	5	24	30-foot equipment limitation zone

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

Unit #1:

- All type 5 streams will be protected by 30-foot equipment limitation zones. There could be some cable yarding over and across some of the type 5 streams.
- All type 4 streams will be protected by no harvest, 100-foot buffers. Except, there could be up to two yarding corridors through the type 4 buffer located in the westernmost portion of the Unit to facilitate harvesting.
- All type 3 streams will be protected by no harvest, site class buffers of 156 feet. No wind buffers were added to the type 3 riparian buffers since wind throw appears to not be a significant problem in the proposal area adjacent to the aforementioned type 3 streams due to lack of existing evidence to prove otherwise and the protected locations of these stream segments buffers.

Unit #2:

- All type 5 streams will be protected by 30-foot equipment limitation zones. There could be some cable yarding over and across some of the type 5 streams.
- All type 4 streams will be protected by no harvest, 100-foot buffers.
- All type 3 streams will be protected by no harvest, site class buffers of 156 feet. No wind buffers were added to the type 3 riparian buffers since wind throw appears to not be a significant problem in the proposal area adjacent to the aforementioned type 3 streams due to lack of existing evidence to prove otherwise and the protected locations of these stream segments buffers.

Road Related:

- The construction of the BR-ML will include installation of relief culverts at pertinent points along the new road system. All constructed road through RMZ's will be monitored during hauling to ensure ditchwater and road runoff will not enter or otherwise adversely affect water quality or RMZ function. Corrective action such as straw bales, silt fencing, rock-lined ditches, and sediment traps will be installed/constructed if necessary.
- Road location within RMZ's has been minimized.

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.

☐No ☒Yes (See RMZ/WMZ table above and timber sale map.)

Description (include culverts):

This proposal includes 12,270 feet of road construction. A total of 63 culverts and one bridge will be installed with this proposal. All culverts are on non-fish bearing streams and are mostly corrugated metal pipes (CMP's) and one arch pipe. The CMP's range in size from 18" x 32' to 96" x 52', and the arch pipe is 120" x 60'. The bridge crosses a Type 3 stream and is approximately 70 feet long. This work will be done per HPA conditions.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. (Include diversions for fish-passage culvert installation.)

☐No ☒Yes, description:

Possible diversions maybe necessary for culvert or bridge installations on type 3 and 4 streams. Installations will follow any HPA that is issued by WDFW.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

☒No ☐Yes, describe location:

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☒No ☐Yes, type and volume:

- 7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

The sub-basin contains soils that are susceptible to surface erosion and mass wasting according to the state soil survey data. The soil survey data for soils on the harvest site indicate an insignificant to medium potential for mass wasting and a low to medium potential for surface erosion (see B.1.c above). Some soil disturbance is anticipated in conjunction with yarding and road construction activities. Surface erosion control and prevention measures discussed in B.1.h. would minimize and in some cases prevent delivery to surface waters. There is little potential for eroded material to enter surface waters as a result of activities associated with this proposal.

- 8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?
☒No ☐Yes, describe changes and possible causes:
- 9) Could this proposal affect water quality based on the answers to the questions 1-8 above?
☒No ☐Yes, explain:
- 10) What are the approximate road miles per square mile in the WAU and sub-basin(s)?
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☒No ☐Yes, describe:

There are approximately 4.0 road miles per square mile overall in the Cavanaugh WAU.

- 11) Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.
☐No ☒Yes, approximate percent of WAU in significant ROS zone.
Approximate percent of sub-basin(s):

Cavanaugh WAU: 38% (11,219 Acres)
Sub-basin 6: 47% (1,569 Acres)
Sub-basin 7: 69% (2,208 Acres)

- 12) If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?

DNR Ownership that is considered hydrologically mature:
Cavanaugh WAU: 95% (6920Acres)
Sub-basin 6: 100% (878 Acres)
Sub-basin 7: 97% (944 Acres)

It is not known how many private acres in the Sub-basin are hydrologically mature. These figures are based on the latest information available prior to the proposal's activities.

- 13) Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?
☒No ☐Yes, describe observations:
- 14) Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.

This proposal should not provide any significant contribution to peak flow impacts in this WAU, even though the proposal is located in the lower elevation portions of the Rain-on-Snow zone in the Cavanaugh WAU. With no harvest riparian buffers of 156 feet established around all type 3 streams, as well as 100-foot buffers protecting type 4 streams and 30-foot equipment limitation zones on all type-5 streams across the units, a significant increase in peak flow is unlikely. Refer to B-3-a-1-c and B-3-a-2 above.

- 15) Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?
☒No ☐Yes, possible impacts:

- 16) Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.

Refer to B-3-a-14.

b. Ground Water:

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

Channeling water through ditches and culverts emptying out onto the forest floor will increase surface saturation in localized areas, but is not expected to effect ground water.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Small amounts of oil and other lubricants could be discharged inadvertently as a result of heavy equipment use. No lubricants will be disposed of on site.

- 3) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?*

☒No ☐Yes, describe:

a) *Note protection measures, if any.*

Due to the nature of resource protective measures of the proposal, there should be no measurable affect on down-slope or downstream ground water resources. See B.3.a.14 above.

c. Water Runoff (including storm water):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Runoff from the road surfaces will be collected in ditches and diverted to stable areas on the forest floor through the uses of ditches, culverts, and energy dissipaters.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

It is not anticipated that waste material will enter ground or surface water as a result of this proposal.

a) *Note protection measures, if any.*

None.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)

Constructed ditches, cross-drain culverts, drain dips, and water bars will be used to control road related runoff. Straw, grass seeding, or other appropriate methods may be used on any soil exposed cut and fill slopes during the course of this proposal in order to prevent sediment movement. Roads and landings will be crowned to avoid water accumulation. Falling and yarding away from all seasonal streams will be applied where feasible. All activities associated with this proposal will meet or exceed Forest Practices standards and will follow the Habitat Conservation Plan.

4. Plants

a. Check or circle types of vegetation found on the site:

☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☐cottonwood, ☐western larch, ☐birch, ☐other:
☒evergreen tree: ☒Douglas fir, ☐grand fir, ☒Pacific silver fir, ☐ponderosa pine, ☐lodgepole pine,
☒western hemlock, ☐mountain hemlock, ☐Englemann spruce, ☒Sitka spruce,
☒red cedar, ☐yellow cedar, ☐other:
☒shrubs: ☒huckleberry, ☒salmonberry, ☒salal, ☒other: **Oregon grape**
☐grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☐skunk cabbage, ☒devil's club, ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☐other types of vegetation:
☐plant communities of concern:

b. What kind and amount of vegetation will be removed or altered? *(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)*

The overstory of live, coniferous vegetation that meets current industry merchantability standards will be removed, with the exception of 8 trees per acre. This will ensure that a portion of the live merchantable timber that is best suited to the site, and /or exhibits desirable wildlife habitat characteristics will be left on site. Most of the current shrubs and herbaceous plants will be disturbed to varying degrees during the timber removal process of this proposed operation.

- 1) *Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: <http://www.dnr.wa.gov> under "SEPA Center.")*

The timber stands adjacent to the proposal are primarily composed of western hemlock with lower levels of Douglas-fir, western redcedar, Pacific silver fir, and the occasional red alder and bigleaf maple. The age of these stands range from 47 to 65 years old in the general vicinity of the proposal. In the higher elevation areas adjacent to the proposal the species composition moves towards stands dominated by Pacific silver fir, with less frequent occurrences of western hemlock, Douglas-fir and western redcedar.

2) *Retention tree plan:*

For the entire proposal 1202 trees have been designated to leave, 698 in Unit #1, and 504 in Unit #2. This represents 8 trees per acre greater than 12"DBH, according to sampling data which was collected during the developmental process of this proposal. This was achieved through the use of random sampling with fixed area plots. Legacy trees are scattered to ensure a variety trees are left that possess desirable wildlife characteristics. Selected leave trees are either in the dominant or co-dominant crown classes, containing structural characteristics important to wildlife, and those best suited to the site indicating wind firmness.

- c. List threatened or endangered *plant* species known to be on or near the site.

None found in database search of DNR's TRAX system.

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Legacy Retention trees will be left on site in both clumped and scattered patterns. (See B-4-b-2 above). Conifer seedlings (Douglas-fir and redcedar at approximately 360 stems/acre) will be planted following completion of the proposal. Soils exposed due to road construction will be grass-seeded.

5. **Animal**

- a. Circle *or check* any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:

birds: ☒hawk, ☐heron, ☐eagle, ☒songbirds, ☐pigeon, ☒other: **Goshawk**
mammals: ☒deer, ☒bear, ☐elk, ☐beaver, ☐other:
fish: ☐bass, ☐salmon, ☐trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐talus slopes, ☐caves, ☐cliffs, ☐oak woodlands, ☐balds, ☐mineral springs

- b. List any threatened or endangered species known to be on or near the site (*include federal- and state-listed species*).

None Found in Database Search of DNR's TRAX system.

- c. Is the site part of a migration route? If so, explain.

☒Pacific flyway ☐Other migration route: *Explain if any boxes checked:*

All of Washington State is considered part of the Pacific flyway. No adverse impacts are anticipated as a result of this proposal.

- d. Proposed measures to preserve or enhance wildlife, if any:

A goshawk nest has been detected adjacent to the proposed harvest area within a riparian management zone. Region Wildlife Biologists have examined the area and determined that the large no-harvest, riparian management zone provides limited buffering for the nest site. In addition some leave trees were left in clumped patterns to provide additional protection to the area adjacent to the nest. If surveys confirm continued goshawk nesting activity, seasonal timing restrictions will be considered to further protect the nesting effort. To protect water resources and provide thermal cover for wildlife, measures include no-harvest riparian buffers, and equipment limitation zones. Constructed ditches, cross-drain culverts, drain dips, and water bars will be used to control road related runoff. Straw, grass seeding, or other appropriate methods may be used on any exposed cut and fill slopes during the course of this proposal in order to prevent sediment movement. Roads and landings will be crowned to avoid water accumulation. Falling and yarding away from all seasonal streams will be applied when feasible. Legacy retention trees serve to increase varied wildlife habitat and all buffers assist wildlife corridors. All activities associated with this proposal will meet or exceed Forest Practices standards and the Habitat Conservation Plan. (See also B-1-h, B-3-a-1-b, B-3-a-1-c, B-3-d, B-4-b-2 and B-4-d)

6. **Energy and Natural Resources**

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

None.

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

None.

7. **Environmental Health**

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

There is minimal anticipated hazard from heavy equipment operations. There is a slight chance of hydraulic or oil spills from equipment operating on the site. There is also a potential fire hazard if operations occur in moderate to severe fire weather conditions during summer months.

- 1) Describe special emergency services that might be required.

Does not apply.

- 2) Proposed measures to reduce or control environmental health hazards, if any:

Safe operation of all equipment will be encouraged. Industrial restrictions and precaution levels regarding forest fire protection will be enforced. The timber purchaser will be required to have fire suppression equipment on site during the restricted fire season while harvest activity is ongoing.

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None

- 2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

Noise from road construction and harvest activity will be present in the immediate vicinity of this proposal during operations. Noise from log hauling will be present along the haul routes during operations.

- 3) Proposed measures to reduce or control noise impacts, if any:

None. Noise associated with harvest and road construction activity will be minimal anywhere but in the immediate vicinity of the proposal. Harvest activity and log hauling are ordinary activities in the area and noise should not be present above customary levels.

8. Land and Shoreline Use

- a. What is the current use of the site and adjacent properties? (*Site includes the complete proposal, e.g. rock pits and access roads.*)

The surrounding area has been and will continue to be used for forest management.

- b. Has the site been used for agriculture? If so, describe.

No.

- c. Describe any structures on the site.

There are no structures within or adjacent to the proposed harvesting units.

- d. Will any structures be demolished? If so, what?

No.

- e. What is the current zoning classification of the site?

Commercial forestland.

- f. What is the current comprehensive plan designation of the site?

Forestry.

- g. If applicable, what is the current shoreline master program designation of the site?

Does not apply.

- h. Has any part of the site been classified as an “environmentally sensitive” area? If so, specify.

None known.

- i. Approximately how many people would reside or work in the completed project?

None.

- j. Approximately how many people would the completed project displace?

None.

- k. Proposed measures to avoid or reduce displacement impacts, if any:

None.

- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The design of this project is consistent with current comprehensive plans and County zoning regulations.

9. **Housing**

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
- Does not apply.**
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
- None.**
- c. Proposed measures to reduce or control housing impacts, if any:
- None.**

10. **Aesthetics**

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?
- Does not apply.**
- b. What views in the immediate vicinity would be altered or obstructed?
- 1) *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*
 ☐No ☒Yes, viewing location:
- Portions of this proposal may be visible from various areas near the community of Lake Cavanaugh. The proposal was located as low on the hillside as possible to avoid a significant impact on the existing views. Leave tree patterns and Riparian Management Zones will help mitigate any visual impacts.**
- 2) *Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?*
 ☐No ☒Yes, scenic corridor name:
- Portions of this proposal will be visible from various areas along Lake Cavanaugh Road.**
- 3) *How will this proposal affect any views described in 1) or 2) above?*
- This proposal may in a small amount add to the existing multicohort landscape.**
- c. Proposed measures to reduce or control aesthetic impacts, if any:
- Leave trees were marked in a clumped and scattered pattern in an attempt, along with the riparian buffers, to reduce the aesthetic impacts. The aesthetic impacts will be further reduced by the topographically isolated location of portions of the proposal.**

11. **Light and Glare**

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
- None.**
- b. Could light or glare from the finished project be a safety hazard or interfere with views?
- No.**
- c. What existing off-site sources of light or glare may affect your proposal?
- None.**
- d. Proposed measures to reduce or control light and glare impacts, if any:
- None.**

12. **Recreation**

- a. What designated and informal recreational opportunities are in the immediate vicinity?
- No designated recreational opportunities currently exist. Informal use may include hunting, camping, hiking, mountain biking, or horseback riding.**
- b. Would the proposed project displace any existing recreational uses? If so, describe:
- The road systems associated with this proposal are currently gated and closed to motorized vehicle use. Use of the proposal area by other users may be limited during the course of operations due to safety and security concerns. No permanent displacement of existing use will occur as a result of this proposal.**
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None. No permanent displacement of existing use will occur as a result of this proposal.

13. Historic and Cultural Preservation

- a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

None known.

- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None known.

- c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)

None.

14. Transportation

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

There are no public streets or highways that serve the site. There will be no addition of public roads to access the site as a result of this proposal.

- 1) *Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?*

No such indication.

- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

No.

- c. How many parking spaces would the completed project have? How many would the project eliminate?

None.

- d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

This proposal will construct approximately 11,494 feet of forest road. This road and other roads in the area have been and will continue to be closed to public motor vehicle access due to problems with resource damage, and trash dumping.

- 1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*

There are no expected adverse impacts on the overall transportation system of the surrounding area.

- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Approximately less than 10 trips per year for management purposes, for the first 5-10 years after the completion of the proposal.

- g. Proposed measures to reduce or control transportation impacts, if any:

None.

15. Public Services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No.

- b. Proposed measures to reduce or control direct impacts on public services, if any.

Access will be restricted as needed during periods of extreme fire danger.

16. Utilities

- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

DOES NOT APPLY

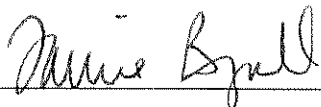
- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

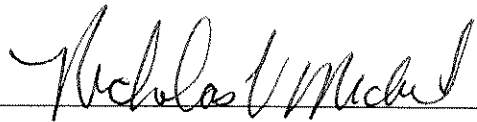
None.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by:  WHITNEY FORESTER, Date: 9-23-04
Title

Reviewed by:  Cascade DM, Date: 9/24/04
Title

Approved by:  for, Date: 12/3/04
Title
Candace Johnson